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ABSTRACT

Based on an assumption that research on the treatment components of experiential education programs is useful in understanding and improving them, a study examined the component of student interaction with adults. Focusing on reference group theory (symbolic interactionism), the conceptual framework of the study is founded upon the assumption that through participation in experiential education programs, students can expand their reference groups by beginning to include co-workers who are adults, thus easing the transition between school and work. Scales developed and used in this study include those examining student perspectives on adults (Empathy, Helpfulness, Communication, Consultation) and selected work setting characteristics (Feedback, Hierarchical and Lateral Interaction, Challenge). Data analysis revealed that the Empathy and Communication scales have high reliability and the potential of discriminating between respondents. Hypotheses were tested by means of a static group comparison design which included 401 students classified by the extent of their work experience. Results indicate that student-adult communication and feedback appear to be important variables which reflect positive interaction. Students with work experience scored significantly higher on communication than those without work experience. However, the grade level of the students and their involvement in extracurricular activities were stronger predictors of the responses on the communication scale.
(Author/MEK)

YOUTH TRANSITION TO ADULT ROLES: A PRELIMINARY INVESTIGATION

Research and Development Series No. 196

By

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U.S. DEPARTMENT OF
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National Institute of Education

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FOREWORD

Over the past decade a variety of programs have emerged that focus on using the work setting as a learning environment for students. Experiential education researchers and those people who design and coordinate the programs agree that students benefit from exposure to the adult world of work. Students may learn job skills, good work habits, and they may gain motivation for improving academic skills as well, all of which may help them in their transition to adulthood. Perhaps the most important element of the work experience is thought to be that students have an opportunity to interact with adults in the workplace on a fairly regular basis.

Under sponsorship of the National Institute of Education, the Learning-in-Work Research Program is conducting basic research on experiential programs. The ultimate goal is that by better understanding how these programs work, research will assist in the eventual improvement of their design and operation. This report is the result of a preliminary study of how youths' experience in the workplace affects how they relate to adults. A questionnaire was developed and field tested, and interviews were conducted with students in the programs, their parents, teachers and employers. Analyses of the data and summaries of the interviews are provided.

Special appreciation is extended to Shelby Price, Superintendent of the Education Service District of Jackson County, Oregon; Rod Groshong, Professor of Education at Southern Oregon State College; the student population of Crater High School, Central Point, Oregon, nearly half of whom completed the questionnaire; the students, teachers, coordinators and administrators of Crater High School; the CE_2 Center and Senior High School in Medford, Oregon and Phoenix High School in Phoenix, Oregon, who participated wholeheartedly in the interviews; and to the program students' parents and employers, who graciously gave their time and hospitality to the interviewers.

Recognition is due Deborah Coleman for her direction of this study and the preparation of this report; Carol Beckman for conducting the interviews, developing the questionnaires, and assisting with the report; Robert Wheatley for directing the design and analysis of the data and writing those sections of the report; Jim Weber for designing and conducting the final computer analyses as well as writing sections of analyses; John Bolland for conducting the initial computer analyses; and Jackie Masters for her secretarial services. Finally, recognition is given to Richard Miguel for his direction of the Learning-in-Work Research Program and to Ronald Bucknam, Project Officer for the National Institute of Education for his guidance and support.

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

ABSTRACT

Based on an assumption that research on the treatment components of experiential education programs is useful in understanding and improving them, this study examined the component of student interaction with adults. The conceptual framework is reference group theory, or symbolic interactionism; the theme is that through participation in experiential education programs, students can expand their reference groups by beginning to include adult co-workers. This experience with adults, both program coordinators and co-workers, should aid in the transition from student to adult roles.

The research design for the first year included instrument development/administration, hypothesis testing, and interviews. Instrument development was the primary activity. Scales were constructed to examine student perspectives on adults (re: Empathy, Helpfulness, Communication, Consultation) and selected work setting characteristics (Feedback, Hierarchical and Lateral Interaction, Challenge). Data analysis revealed two scales to have high reliability and the potential of discriminating between respondents. Further refinement of the other scales is necessary.

Hypotheses were tested by means of a static group comparison design which included 401 students classified by the extent of their work experience. Student-adult communication and feedback appear to be important variables which reflect positive interaction. Students with work experience scored significantly higher on communication than those without work experience. However the grade level of the students and their involvement in extracurricular activities were stronger predictors of responses to the scale communication.

Interviews were conducted with students, parents, employers, and school personnel to supplement and enhance questionnaire data. All people interviewed were positive about the effects of the programs in general and specifically about the improvement in student-adult interaction.

The information included in this report represents a summary of the entire research effort. A complete report of all phases of the study, including documents such as the questionnarie is contained in the report entitled, Youth Transition to Adult Roles: A Preliminary Investigation, Technical Report. This report is available on request at the National Center.

YOUTH TRANSITION TO ADULT ROLES: A PRELIMINARY INVESTIGATION

This study considers whether participation in experiential education programs which place students in work settings facilitates adolescents' transition from the roles of high school students to those of adult workers. Symbolic interactionism, or reference group theory, was chosen as the conceptual framework for the study because of its emphasis on characteristics of the person and the environment and, more importantly, the interaction of the two. Experiential programs fit into this framework because they provide worksite experiences which enable and encourage students to include adults within their reference groups in the persons of program coordinators and work supervisors.

Over the past decade the workplace has gradually acquired new prominence as an environment for the education and socialization of youth. Today the learning opportunity provided by work settings is often considered a necessary complement to that acquired in the classroom. Under a variety of names, several hundred programs exist, sponsored by agencies as diverse as schools, local governments, and private employers. These programs often have different goals: to motivate youth to return to school and to stimulate interest in alternative careers.

The programs selected for study, Cooperative Work Experience and Experience-Based Career Education, use a work setting as the environment for experience outside the school. It is in this work environment that youth are to learn adult work roles and receive assistance in their transition from youth to adulthood. Although most program planners and policy makers assume that participation in the workplace affects youth positively, there is little research to indicate how different placements and programs influence the social and psychological development of youth. This study attempts to initiate such inquiry by combining the theory and research on adolescent development and socialization with available research on evaluation of work experience programs,

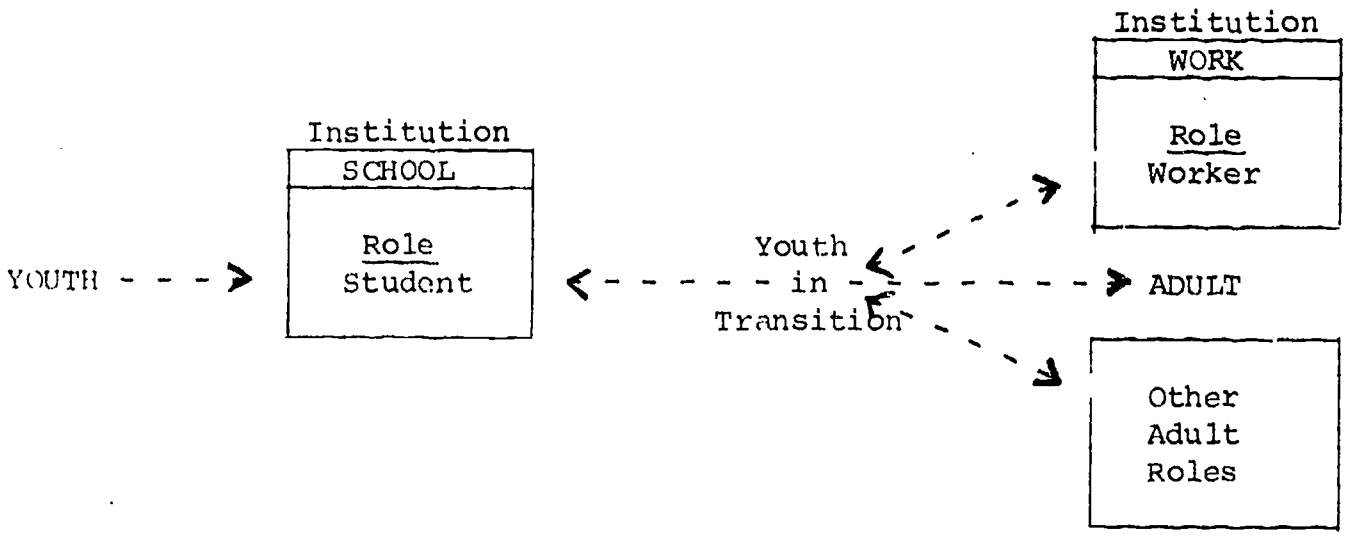
on worker satisfaction, and on career development. The purpose of such a process is to provide a conceptual framework for understanding how experience in work settings may assist young people as they strive to assume adult roles. In creating this framework the following assumptions are made:

- Youth transition to adulthood is a process of gradually acquiring skills necessary for assuming adult roles.
- The school and the workplace are two critical institutional settings in which youth function. In both settings adults determine the rules and procedures; and they evaluate performance.
- Reference group theory can provide a perspective through which the progress of youth in the transition to adult roles may be observed.

Figure 1 is an attempt to depict the way youth transition is seen in this study. For this study we view youth transition as

FIGURE 1

YOUTH IN TRANSITION TO ADULT ROLES



moving from taking the role of youth in school and family to taking the role of adult in the workplace, home, and community. A student who participates in an experiential education program, spending part of the day in school and part in a work setting, adds another perspective, that of "worker," to his/her repertoire of experiences. The student's attitudes may be modified, or new ones required for responding to the work environment. New symbols will probably have to be acquired. Depending on the nature and quality of the work experience, co-workers and/or supervisors may become "significant others" and role models.

By examining the perspectives of youth toward adults we should be able to determine whether experience in a work setting changes the way youth use adults as a reference group. Further, by comparing youth who have part-time jobs and other work experience to those who are in work experience programs, we should be able to determine whether the added attention of a teacher/coordinator fosters greater appreciation of adults. Finally, youth with work experience should be more at ease interacting with adults; should value adults as agents for information and guidance.

Literature Review

The need for such an approach to research was affirmed by a report prepared for the Interagency Panel for Research and Development on Adolescence.[1] Even more significant are the requests for basic research on youth as they move from school into the world of work.[2] After discussing topics which include student-designed field experiences, cooperative education, and the acquisition of coping skills, the editors concluded that improved data on youth socialization patterns and current program practices were needed. In a similar manner Ingoldsby and Adams argue that there is little available to test systematically the assumptions on which the claims for experience in work settings are made.[3]

An analysis of the need for research (i.e. program, personal, and institutional) on the transition from school to work is the topic of a recent publication of the National Manpower Institute. In the section on work experience and youth's transition to work, the authors note, "Despite the assumption that work experience contains great potential for contributing to youth's successful transition from school to work, there are only limited data available regarding the value of such experience during schooling in later adaptation to the work environment."[4] Later in listing

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1. E. Searcy, Work Experience as Preparation for Adulthood: A Review of Federal Job Training Vocational and Career Education Programs. An Analysis of Current Research, and Recommendations for Further Research. (Washington, D.C.: Social Research Group, The George Washington University, 1973).

2. Harry F. Silberman and Mark Ginzberg, eds., Easing the Transition from Schooling to Work. (San Francisco: Jossey-Bass Publishers, 1976).

3. B. B. Ingoldsby and G. R. Adams "Adolescence and Work Experience: A Brief Note," Adolescence 12 (1977):339-42.

4. Paul E. Barton and Byrna Shore Fraser, Between Two Worlds: From School to Work. (Washington, D.C.: Center for Education and Work, National Manpower Institute, 1978):58-61.

areas where more information is needed the following questions appear:

- How do the perceptions of work experience differ among youth, employers, employees, unions, parents, educators, government officials and researchers?

- What are the theoretical models underlying existing efforts (e.g. social learning theory or development theory)?

- What elements of work experience contribute to achievement of objectives? These include settings--density and quality of role models, communication patterns, etc; activities--self regulation, responsibility, adaptation to individual differences, substance of experience, etc.

- What are the effects of work experience--what impact does work experience have on participants' academic achievement, dropping out, self esteem, work attitudes and subsequent labor market experience . . . ?

They conclude, "Until substantial studies have been conducted in those areas, we will not be able to determine the real impact of work experience during schooling on later adaptation to the labor market."[5]

Hamilton calls for research that defines the association of various types of program characteristics with developmental changes in particular classes of youth. Such research requires new forms of instrumentation applied in experimental designs.

The research called for by Hamilton is in its infancy. A background of data, instruments or definition from which to draw is lacking. Most research of work experience has tended to be program evaluation with hints of topics for basic research. Three programs which have been studied across several locations are the Neighborhood Youth Corps' In-School Work Program, the Experience-Based Career Education Program, and the Executive High School Internships Program.

The most publicized finding of the study of the Neighborhood Youth Corps, conducted from 1970-1977, was that the program failed

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5. Stephen F. Hamilton, "Experiential Learning Programs for Youth" (Paper prepared for the National Institute of Education, June 1978).

to deter disadvantaged youth from dropping out of school. Of greater significance to basic research is the finding that no effort was made to identify the youth most likely to benefit from the program offerings. Although another finding revealed that many of the work experiences were not meaningful to the participant, unfortunately the use of the term "meaningful" was not operationally defined.[6]

In 1977, an evaluation was conducted of the Executive High School Internships Program. At the time the program served 2,500 students annually across thirty school districts located in nineteen states. By the use of pre- and post-test data from interns and a control group, no statistically significant differences were found between the groups. In interviews, however, the interns, sponsors, parents, and coordinators indicated that the programs had a positive effect on participants.[7]

During the 1974-75 school year, a third-party evaluation of the four basic models of the Experience-Based Career Education Program (EBCE) was conducted by the Educational Testing Service. These programs were designed to promote and utilize school and community resources to blend cognitive, affective, interpersonal, and career-development skills; and to increase adult involvement. Results of the study revealed that there was strong community support for the program, that participants were not hurt academically by their absence from the routine school day, and that other program outcomes were positive. In-depth study of the impact of student involvement with adults was not reported.[8]

Basic research on the effects of programs on youth appears to be on an exploratory level. McKean published a paper exploring a method by which an evaluator can estimate whether or not a program fosters personal growth. He proposes that teachers use behavioral indicators to measure student change, combining a post-test control group design with personal interviews. Changes were to be noted in behavior and in attitudes such as cooperation, perseverance, and pride in work. The study reported that youth in the Work Experience Career Exploration Program, a prevocational

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6. Comptroller General of the United States. Difficulties of the Neighborhood Youth Corps In-School Work Program and its Management Problems. (Washington, D.C.: Department of Labor, 1973).

7. Michael R. Crowe and Jerry Walker, Evaluation of the Executive High School Internships Program: Final Report. (Columbus, Ohio: The Center for Vocational Education, 1977).

8. R. B. Bucknam, "The Impact of EBCE--An Evaluator's Viewpoint," Illinois Career Education Journal 33 (1976):32-36.

exploratory program for educationally disadvantaged ninth-grade students, resulted in significant improvement on those measures.[9]

Other areas where research has been attempted are on the influence of pay as a factor in program participation and the effect of the program on attitudes toward school.[10] Factors which influence completion of programs is also an area of study, and still another is the mechanisms which "link" the institutions of education and work. The conclusion of the study of linkage mechanisms conducted by the College Entrance Examination Board was that neither the school nor the workplace adequately supports youth during the transition period.[11]

In the spring of 1978, EBCE was the object of another study. This study, conducted by the Northwest Regional Educational Laboratory, determined students' views on what constitutes an "excellent" learning experience in the community. A questionnaire was administered to 218 students enrolled in eight programs in five states. One finding particularly relevant to this study is that a quality learning experience results when adults are relaxed toward their students and are willing to give praise for tasks well done. In response to a question about what contributes to an excellent learning environment in the workplace, youth said that they (1) received help from adults, (2) sensed the personality of the adults there, (3) listened and talked with adults, and (4) received adult responsibility. In the section of the report with implications for program design, the authors noted that young people seem to be ready and anxious for adult responsibilities. However there are apparent sex differences in the way youth react to the experience. Specifically, young women seem to be more attuned to adult friendliness and helpfulness.[12]

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9. B. McKean, ed., Toward Defining Measurable Objectives in the Affective Domain for Experiential Education Programs, ED 139 572 (Colorado Outward Bound School, ERIC Document Reproduction Service, 1975).

10. Alan J. Cohen and Steven M. Frankel, Data Analysis Report: An Assessment of School Supervised Work Education Programs. (Santa Monica: Systems Development Corporation, 1973).

11. Richard J. Ferrin and Solomon Arbeiter, Bridging the Gap: A Study of Education-to-Work Linkages. (New York: College Entrance Examination Board, 1975).

12. Thomas R. Owens and Sharon K. Owen, Characteristics Differentiating Excellent from Poor Learning Experiences in the Community: A Study of Student Perceptions. Abstract presented at the Association for Experiential Education Conference, 29 September 1978.

Hedin and Conrad found aspects of youth relationships with adults to be a consistent finding in their evaluation of experiential education programs. They report that participants and adult supervisors agree that gaining more realistic attitudes toward other people is an effect of programs.[13] Another finding, results of a sematic differential on adults, was that youth who had experienced a mentorship relationship with an adult scored adults as more friendly, interesting, successful, and serious, and less complicated, unhappy, and selfish, than did their peers who had not had this relationship.[14]

The work by researchers such as Owens, Conrad, and Hedin represents a small effort in contrast to the billions of dollars spent to put youth into work settings. An increasing number of documents have been written expressing the need for new and more appropriate research which will test the assumptions on which many work programs are based.

This study attempts to break ground by simultaneously developing an instrument, collecting interview data and testing the research hypotheses. The primary objective was to develop an instrument using interview data and hypotheses testing to provide both qualitative and empirical data to assess the strength of the instrument itself.

Method

Research Design

Figure 2 illustrates the static-group comparison pre-experimental design[15] used in this study. As indicated in that illustration the study involved conducting comparisons among four groups.

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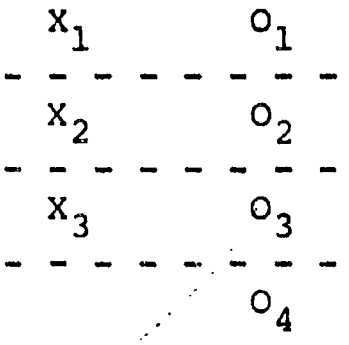
13. Diane P. Hedin and Dan Conrad, "The Evaluation of Experiential Learning Project: Preliminary Findings." Paper presented at the 1979 Annual Meeting of the American Educational Research Association in San Francisco. (Center for Youth Development and Research, University of Minnesota, 1979), p. 10.

14. Ibid., p. 27.

15. D. T. Campbell and J. C. Stanley, Experimental and Quasi-Experimental Designs for Research. (Chicago: Rand McNally & Co., 1963).

FIGURE 2

STATIC-GROUP COMPARISON RESEARCH DESIGN



Students in the first three of those groups have participated in some form of work experience. In two of these three groups, individuals acquired their work experience as part of a formal school program--Cooperative Work Experience (CWE) or Community Experiences for Career Education (CE_2). The third group of students obtained their work experiences independently of any formal school program. The students in the last group shown in Figure 2 had virtually no work experience. Random assignment was not used to equate the groups (indicated by dashed lines). Due to several basic sampling contraints the students included in the study had to be selected from groups defined on an a priori basis.

Figure 3 summarizes the major threats to validity and associated concerns enumerated by Campbell and Stanley[16] for the basic static-group comparison design. As suggested by that figure, selection is one of the plausible rival hypotheses that exists when one employs this type of design. In the current study this is a potential concern since there is no assurance of, nor data to unequivocally assess, the pretreatment equality of groups. Those data that were collected seem to indicate that some differences existed among the various groups on several demographic characteristics, including age and grade level. Individuals in the three pseudotreatment groups (i.e., with work experience) appear to be older and, correspondingly, enrolled at higher grade levels than the members of the group with no work experiences (thereby contributing to possible maturation confounding). Such results serve to highlight the difficulty in attributing any observed effects exclusively to work experience due to differential self-selection of students into the various groups. These results also serve to at least partially jeopardize generalizability.

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16. Campbell, Designs for Research, p. 8.

FIGURE 3
POTENTIAL PROBLEMS OF STATIC-GROUP COMPARISON DESIGN[17]

Source	Definite Weakness	Factor Controlled	Possible Concern	Factor Irrelevant
Internal Validity:				
History		X		
Maturation			X	
Testing		X		
Instrumentation		X		
Regression		X		
Selection	X			
Mortality	X			
Interaction of Selection, Maturation, etc.	X			
External Validity:				
Interaction of Testing and X				X
Interaction of Selection and X	X			
Reactive Arrangements				X
Multiple X Interference				X

An examination of the completed student questionnaires does not support mortality as a rival alternative explanation. In addition, the two primary comparison groups represent fairly large samples.

One advantage of the current study over a study that employs a traditional two-group static-group comparison design revolves around the inclusion of the two additional comparison groups. Campbell and Stanley[18] argue that numerous treatment comparisons can render rival hypotheses less plausible, at least in terms of correlation. This is the case when the treatment groups vary in nature (i.e., the groups have different attributes). It is then possible to rule out the attributes on which the groups differ. There is some evidence to indicate that the three work experience (pseudotreatment) groups differ with regard to academic program, extracurricular activities, and type of work experience. Consequently, this design is somewhat stronger to the extent that all three treatment groups produce similar results. In an exploratory effort, correlations can be considered preliminary evidence for further investigation of hypotheses or rival hypotheses.

17. Ibid., p. 8.

18. Ibid.

Sampling Process

Basically a two-stage sampling design was used to identify the respective groups of students to be included in the study. During the initial stage of that process the specific sites or secondary schools in which the study was to be conducted were identified. The second stage dealt with the selection of individual students within each of those (sampled) schools/sites. The specific procedures employed at each stage in this process are described as follows.

Two site selection criteria were employed during sampling. Those criteria were: (1) candidate institutions (secondary schools) had to support at least two experiential education programs--one of which had to be an Experienced-Based Career Education (EBCE) program designed by the Northwest Regional Education Laboratory and the other a Cooperative Work Experience (CWE) program; and (2) candidate institutions had to express an interest/willingness to participate in the study. Given the first of these selection criteria, the target population consisted of approximately sixty-seven schools. This potential population was further reduced to the participating school when the second criterion was applied.

Initially, all students enrolled at the selected high school were considered potential study participants. An initial assessment of the numbers of students available, however, suggested that the efficacy and efficiency of the study would be considerably enhanced if a sample rather than the total student body were identified and served as participants. The following limitations and/or concerns were taken into account during the selection of that student sample: (1) homogeneity/heterogeneity of the population; (2) data collection; and (3) data analysis.

Student Sample Size Determination

Estimated student sample size was calculated using a permissible error or tolerance of ± 1 original scale unit and a probability level of one percent (standard error units = 2.57 for $p = 0.01$). These criteria were selected to promote precision in the point estimates. The standard deviation estimate was obtained from the pilot study and represented the largest estimate so that the size of the sample would be sufficient for all scales.

A sample size of 324 was calculated. This would provide satisfactory estimates for scale development purposes. However, a second study objective related to exploring preliminary hypotheses. For this reason, it was necessary to determine comparison group sizes that would yield adequate power for the statistical tests involved. Statistical power analysis addresses this question; i.e., assuming a real effect of given size, what is the probability

that the statistical test will detect the effect (the probability of rejecting a false null hypothesis).

Through power analysis, the sample size can be determined as a function of three parameters. These parameters were delineated as follows: (1) significance criterion, α (alpha error = .05); (2) amount of power, power = .99 or, complimentary, β (beta error) = 1 - power = .01; and (3) effect size, ES = one-third of a standard deviation (based upon pilot standard deviation, σ = 7). The effect size was selected in accordance with Tallmadge's[19] criterion for an "educationally significant" effect.

Using sample size tables and procedures described by Cohen,[20] total sample size (N) = 273. Group sample sizes are unequal portions of this number as specified (α = .05; f = .29; power = .99; u or number of groups minus one = 3).

n_a (programmatic--CE_2) = .06 (273) = 16

n_b (programmatic--CWE) = .18 (273) = 49

n_c (independent) = .35 (273) = 96

n_d (no work experience) - .41 (273) =112

The larger number obtained from the point estimate sample size formula, N = 324, was used as a base, while remaining cognizant of the required group sizes for our specifications. The decision was made to enlarge this number (oversample) because of anticipated administration problems, the low number of program students, a questionable sampling frame, and preference for a comparison group with a range of characteristics.

Sampling Strategy--Student Selection

Two strategies were employed in selecting the sample. First, all students in the school's two experiential education programs were asked to complete the instrument. There were 109 Cooperative Work Experience (CWE) students and 11 students enrolled in Community Experiences for Career Education (CE_2)--the EBCE program.

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19. Kasten G. Tallmadge, The Joint Dissemination Review Panel Ideabook. (Washington, D.C.: U.S. Department of Health, Education and Welfare, 1977).

20. Jacob Cohen, Statistical Power Analysis for the Behavioral Sciences. Revised Edition. (New York: Academic Press, 1977).

Second, a random sample stratified by grade level was drawn and an additional 400 students were selected--100 seniors, 100 juniors, and 200 sophomores (designed originally as control subjects). A table of random numbers was used to draw these groups from a computer printout of students currently enrolled. Procedures summarized by the Rand Corporation[21] for the use of their tables were followed. Total sample size included 520 individuals.

Data Collection Procedures

The questionnaire was administered at the participating high school in Oregon on May 1, 1979. Prior to administration, the teachers were informed and brief instructions given including student anonymity and voluntary participation.

A total of 401 students completed the instrument. Of the 520 who were to take the questionnaire, 336 completed it, which is a mortality rate of 34%. Approximately sixty-five students (16% of 401) who were not part of the random sample completed the questionnaire. There is some evidence that half the 34% mortality rate can be accounted for as follows: (1) 14% absentee rate on the day the instrument was administered; (2) 1% refusal rate (persons electing not to participate in the study); and (3) 2% discrepancy between the sampling frame and individuals actually attending school. These events, of course, represent a departure from randomness.

Interview data were collected April 23 through April 27, 1979. These interviews were conducted on site by a member of the National Center project staff and a professor of education from an area community college.

Sample Characteristics

Of the four groups, CE_2 is the youngest with over 80% of the students being 16 or 17 years old (Figure 4). In contrast, over 70% of the CWE participants are 17 or 18 years old. Both the Independent Work Experience group and the No Work Experience group contain fairly balanced representation from each age level. This overall pattern is not surprising as it reflects the sampling design. Youth in the program groups are drawn from the ages for which the programs are targeted. Because of the differences in composition of the groups by age, a measure of any variable which is highly influenced by age would be weighted differently for each group.

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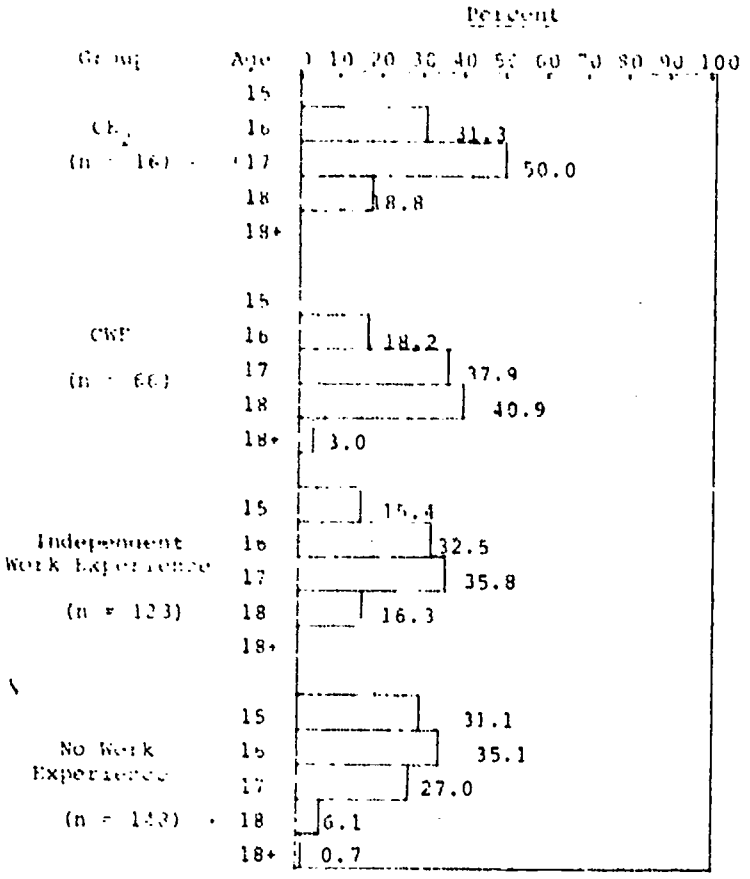
21. Rand Corporation. A Million Random Digits with 100,000 Normal Deviates. (New York: Free Press, 1955).

FIGURE 4

WORK EXPERIENCE GROUPS BY AGE



[1] Total N's will vary depending upon number of missing observations

FIGURE 5

WORK EXPERIENCE GROUPS BY SEX

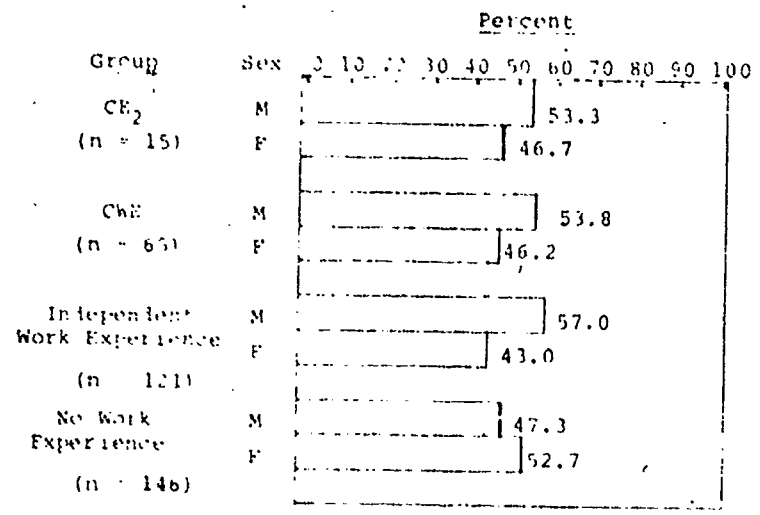


FIGURE 6

WORK EXPERIENCE GROUPS BY GRADE LEVEL

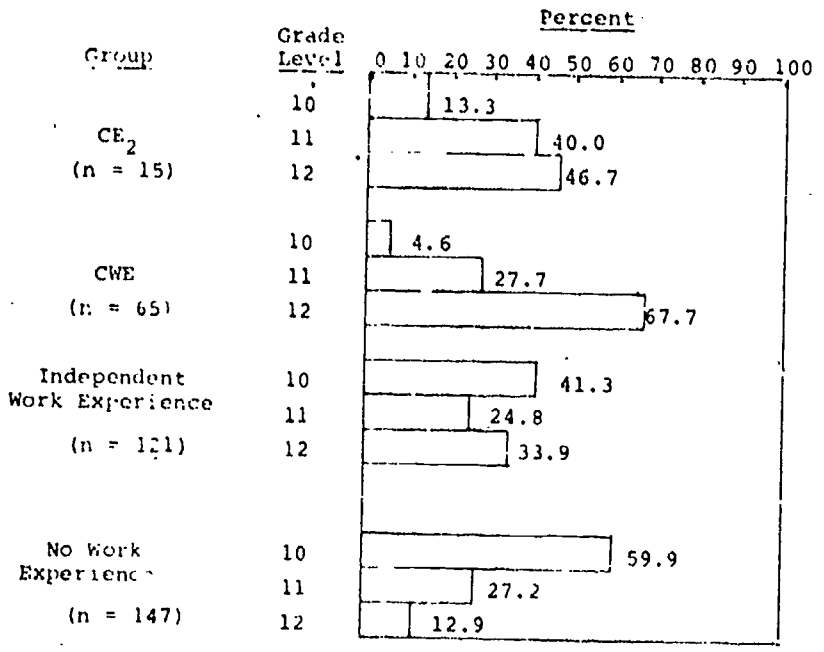


Figure 5 shows that a somewhat higher percentage of males than females are in the three groups of students who have work experience. The group of youth with no work experience presents a reverse of the ratios of the first three groups. However, the groups are still fairly balanced. The distribution by grade is similar to that of age considering that some students may be behind in credits (Figure 6). Of particular interest to the study is that a high percentage of the students in CWE (67.7%) are seniors and therefore very close to actually terminating their high school experience and entering the job market or continuing school. In contrast to this situation, 59.9% of those youth with no work experience are in the tenth grade and therefore may be very much a part of their high school group.

For three of the four groups, over half of the students self-selected general as the term best describing their course of study (Figure 7). While 50% of the CE_2 students selected vocational as their program of study, this represents only eight students. The group called Independent Work Experience has the largest percentage of students indicating enrollment in the college preparatory curriculum (31.1%).

Figure 8 shows the percentage of each group involved in the five categories of extracurricular activities (i.e., sports, student government, music, clubs, and other activities). It also shows that the students in CE_2 tend not to be involved in many school-related activities. This finding is consistent with the interview data below that these youth are potential dropouts. Further, the CE_2 program is conducted in a separate building. The students in the CWE, Independent, and No Work Experience groups seem to be involved in activities to about the same extent. The exception is in sports, where more youth who have no work experience are participants. This finding is understandable since athletic practice often conflicts with jobs after school.

The characteristics just discussed describe aspects of the students' relationships with the school. The next two figures, 9 and 10, depict the extent of part-time and full-time work experience for students in each group. Approximately 45.9% of the group called No Work Experience had some work experience but not enough to put them in the Independent Work Experience group. In general, the Independent Work Experience group reflects more months of full and part-time employment.

Interview Data

With the purpose of enhancing and expanding the significance of the statistical findings, interviews were conducted. Six students were chosen by program coordinators based on the criterion

FIGURE 7

WORK EXPERIENCE GROUPS BY HIGH SCHOOL CURRICULUM

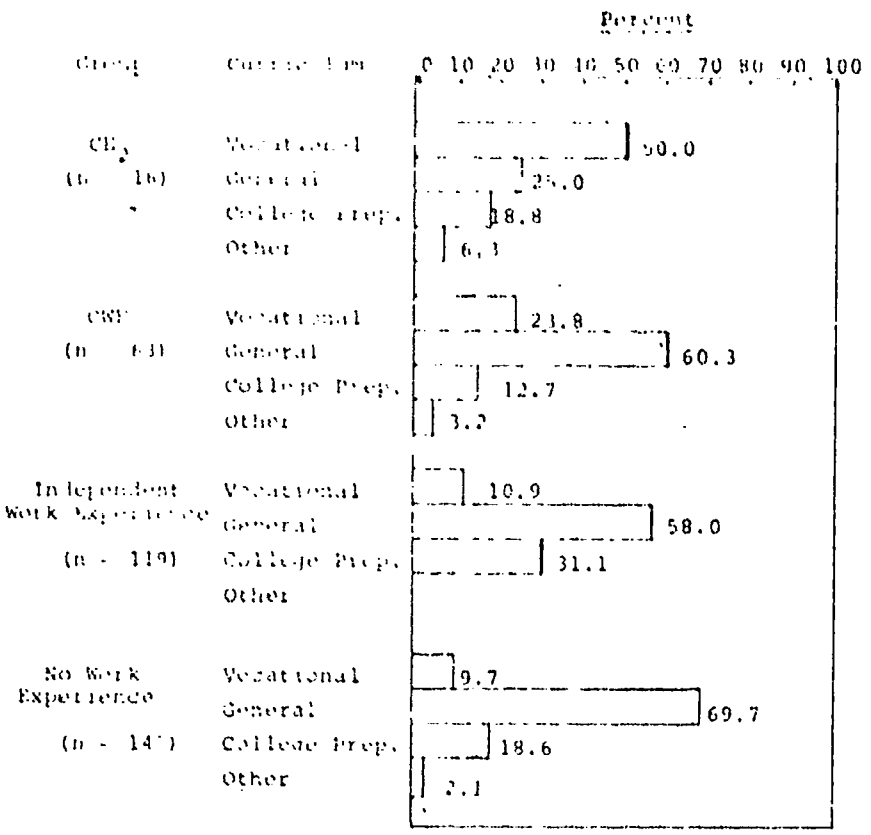


FIGURE 8

WORK EXPERIENCE GROUPS
BY EXTRACURRICULAR ACTIVITIES

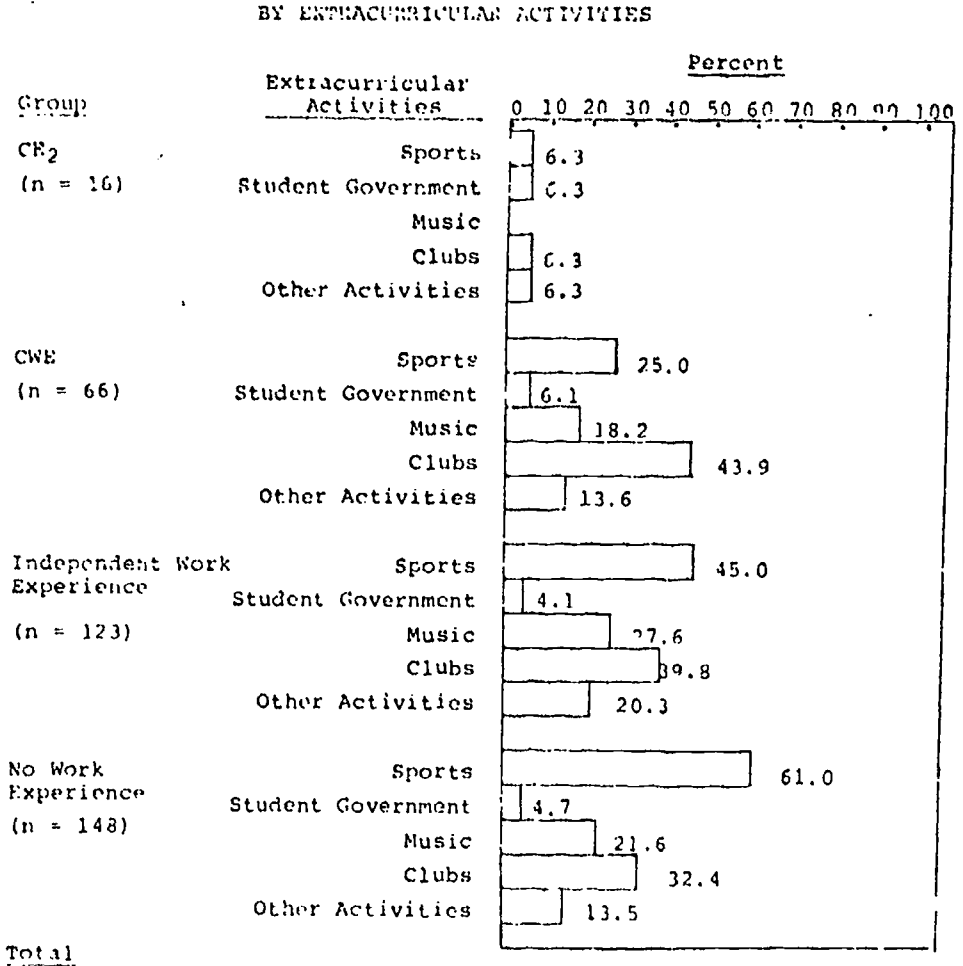


FIGURE 9

PERCENTAGE OF GROUPS WITH
PART-TIME WORK EXPERIENCE

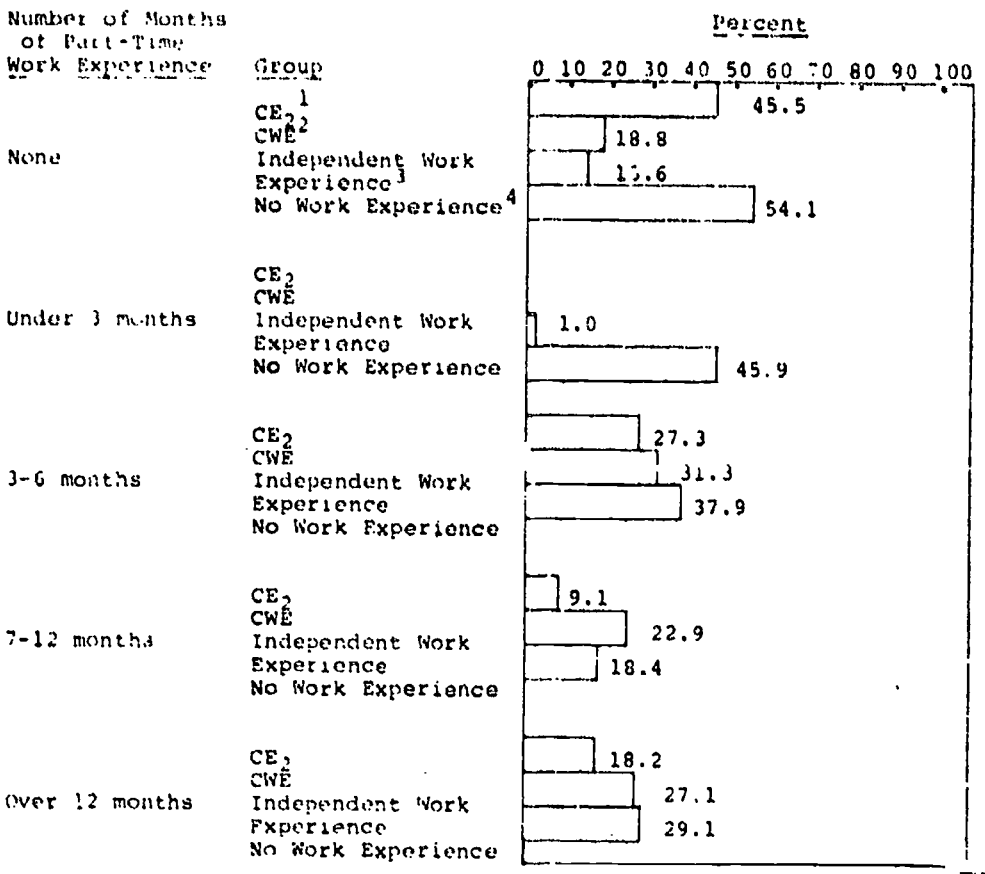
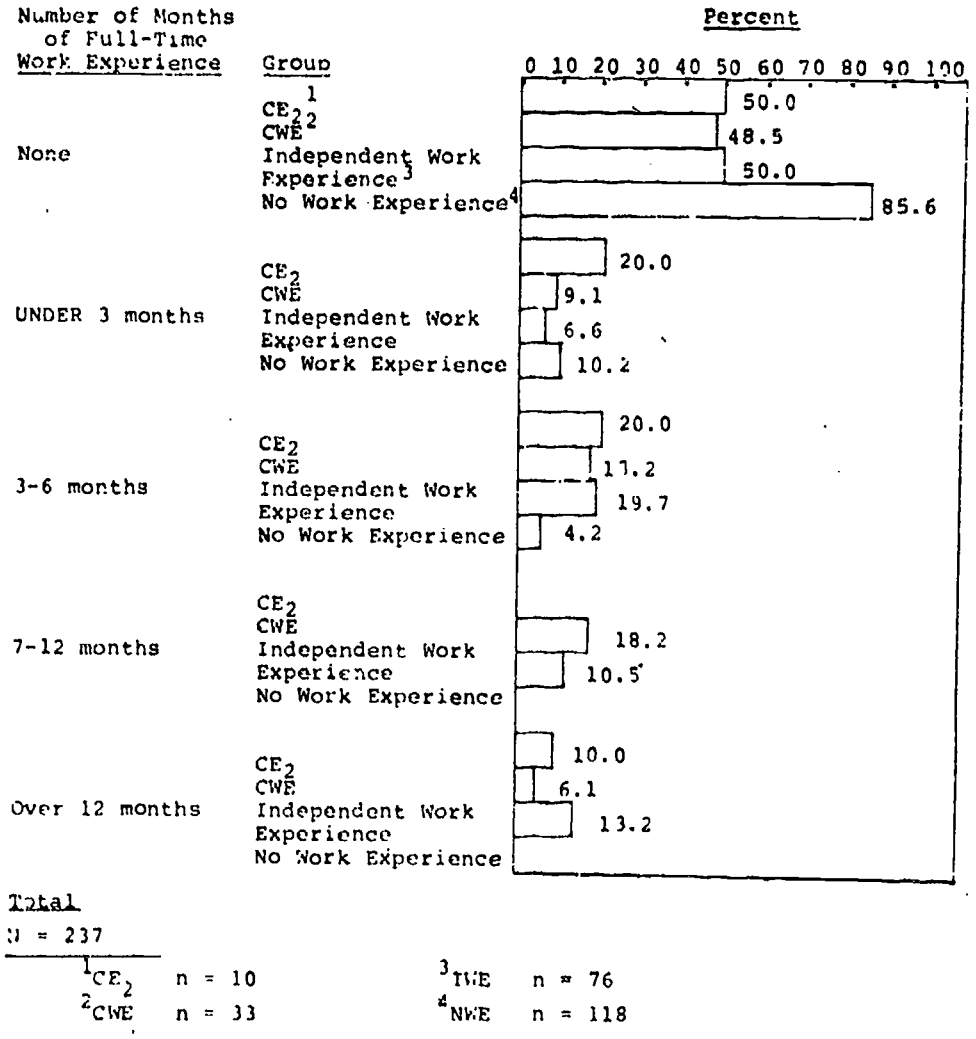


FIGURE 10

PERCENTAGE OF GROUPS WITH
FULL-TIME WORK EXPERIENCE



that the program experience had been a positive critical incident in their lives. Included in this group of six were two students from each of three high schools in Oregon. Three were from Cooperative Work Experience (CWE) and three from Community Experiences for Career Education (CE_2); three were females and three, males. Students, their parents, program coordinators, and employers were interviewed to get each person's perspective on the effects of the program.

Co-interviewers were a member of the project staff and a professor of education at a local college, who arranged the interviews. This fact that all people interviewed were familiar with his college seemed to help them feel at ease during the interviews. Over the course of five days, interviews were conducted, usually ranging in length from twenty to thirty minutes. Students and school personnel were interviewed in their school settings, employers at their workplaces, and parents in their homes. Interview style was conversational in the hope that those interviewed would be at ease and would state their views and feelings freely. Four general topics were covered:

1. The background of program participants
2. The programs
3. The job experience
4. The changes in student relationships with adults as a result of the program experience (the critical topic of the study)

The two programs, CE_2 and CWE, have a number of similarities: the enthusiasm pervading the programs; types of job placements; and the individualized plans which allow flexibility for meeting student needs. The main difference between the programs is that CWE serves students who want a job, need a career education credit, or seek a challenge beyond school, while CE_2 serves students who are potential dropouts because of interpersonal or academic problems. Other differences are physical settings of the programs, numbers served, and length of time on the job.

On the question of whether participation in experiential education programs improves students' relationships with adults, the consensus of those interviewed is a very solid "yes." For students in CWE, program participation seems to offer a challenge and an opportunity to sharpen their skills in relating to adults. For CE_2 students, the effects of program participation are seen as more explicitly positive, because these students enter the program with problems in relating to adults. They are treated as adults for perhaps the first time, receive support from teacher-coordinators and workplace mentors, and learn how to succeed.

Phase I Results and Discussion

Scales were developed to measure youth transition to adult roles and selected work setting characteristics. Two item pools were generated to reflect these variables.

Youth Transition to Adult Roles

The use of adults as a significant reference group provided the conceptual framework for assessing the transition to adult roles. The following categories were selected as the initial scheme for items: (1) perceptions of adults; (2) frequency of student-adult interaction; and (3) scope of interaction.

A review of the literature established Duncan's generation gap instrument[22] as readily accessible and fundamentally grounded. An examination of the scale revealed that approximately half the items contained parental references. This factor, together with a design requiring data more continuous in nature, precluded the exclusive use of this instrument. However, some items from the generation gap instrument were included in the initial pool of items in order to build on Duncan's foundation.[23] The criteria summarized by Edwards[24] were used to write 145 additional items.

A Likert[25] format with the response categories ranging from strongly agree to strongly disagree was used to scale most of the remaining items. These response categories were subsequently scored on a five-point range, with the low score representing a more favorable perception of adults. The scope of interaction items referred to potential problems/decisions. On these items, respondents were requested to designate the one person that they would include in the decision process. Five categories of individuals were provided. They were scored adult or peer.

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22. D. F. Duncan. "Measuring the Generation Gap: Attitudes Toward Parents and Other Adults," Adolescence, 1978, 13 (49):77-81.

23. We gratefully acknowledge the permission of Dr. David F. Duncan to include some original items and to adapt others for our purposes. Items included on the final version are specified, and proper credit accorded.

24. A. L. Edwards, Techniques of Attitude Scale Construction, (New York: Appleton-Century-Crofts, 1957).

25. R. Likert, "A Technique for the Measurement of Attitudes," Archives of Psychology 22, no. 1 (1940):1-55.

Face validity was demonstrated through classification by a panel of seven judges with expertise in the area of instrumentation. This procedure resulted in elimination or minor revision of several items.

Work Setting Characteristics

The literature review suggested several important factors in successful experiences. The following four characteristics were selected as item categories: (1) mentorship; (2) interaction; (3) career reflection; and (4) learning opportunities. Current jobs or program work settings were described in terms of these characteristics.

Approximately twenty items were written for each of the four work setting characteristics. Face validity was established through classification by the panel of experts. Likert scaling procedures were again used. Five response alternatives ranging from definitely true to definitely false were provided. Low scores were indicative of favorable experiences.

Pilot Test

A pilot test of all scale items was conducted in two secondary schools involving 176 students representing a range of student abilities and work experiences. This phase of the study was initiated subsequent to the expert panel review of each scale. School selection was based on (1) variety of programming, (2) convenience, and (3) willingness to participate.

The purpose of the pilot study was to provide information concerning reading level, format, and scale properties. Further refinements in items and scales resulted. Data collected during this phase greatly facilitated reducing the pool of items for each scale.

Empirical Scale Definition and Description

The major data collection effort was directed toward testing the revised scales under more controlled conditions. Preliminary data analysis revealed that the scales as initially formulated yielded inadequate reliabilities. For exploratory purposes, several statistical techniques were considered. The following discussion focuses on empirical efforts to assess scale dimensionality.

The first step undertaken to more adequately delineate the scales embedded in the study questionnaire involved the application of factor analytic techniques. Given the nature of the

available data and the related ratios of items to sample points, the decision was made to utilize these techniques in an exploratory sense and to be somewhat flexible in interpreting/applying the resulting outputs, particularly if they were not in complete agreement with the results of associated analyses (such as those from the reliability analyses). In other words, the results of the factor analyses were not viewed as the sole determinants of the respective scale-item correspondences, but rather only as one of a number of inputs into the determination of those relationships.

The specific factor analytic technique employed was the Principal Factoring Method with Iteration,[26] which is currently the most widely accepted and utilized factoring approach in use today. Several basic decision rules involved during the execution of the factor analyses were:

1. Factoring was terminated when the resulting eigenvalues were less than one (1), i.e., a factor (scale) was assumed to exist in the respective item sets and to be sufficiently well "determined" if its associated eigenvalue was one or more;

2. The varimax (orthogonal) rotation procedure was employed in an effort to obtain a more meaningful/interpretable patterning of variables (items) than occurred in the unrotated factor matrix; and

3. A variable (item) was assumed to be substantially related (i.e., correlated) with a particular factor (scale) if its associated factor loading was .30 or greater.

The results of the two factor analyses reveals that four factors/scales were identified in each set of items. The labels or names attached to each of "the use of adults as a significant reference group" scales and "work characteristics" scales (based upon a review of the related subsets of items) are presented in Table 1.

Given the clusters of items (i.e., scales) identified via the two factor analyses, the next step initiated involved the computation of reliability estimates for the related scales. The approach used involved the calculation of internal consistency

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26. Norman H. Nie, C. Hadlar Hull, J. G. Jenkins, K. Steinbrenner, and Dale Brent. SPSS: Statistical Package for the Social Sciences, 2d ed. (New York: McGraw-Hill, 1975).

reliabilities (alpha coefficients). These estimates were computed because (1) the questionnaires were administered only once to each student, thus pre-empting the computation of other estimates and (2) generally speaking, the alpha coefficient represents the lower bound for reliability (and as a result the computed estimates should be conservative estimates). The reliabilities obtained for the various scales are summarized in Table 1.

TABLE 1

ESTIMATED RELIABILITIES (α'S) FOR THE EIGHT SCALES

Set	Scale	Coefficient-Alpha
Criterion	One - Empathy	0.85
	Two - Helpfulness	0.60
	Three - Communication	0.75
	Four - Consultation	0.68
Environmental	One - Feedback	0.85
	Two - Hierarchial Interaction	0.72
	Three - Lateral Interaction	0.64
	Four - Challenge	0.71

Phase II Results and Discussion

Subordinate to the primary task of scale development, several hypotheses were formulated. Preliminary data are presented to explore these hypotheses.

Youth Transition to Adult Roles

The research hypothesis for the first analysis was: youth with programmatic work experience and youth with independent work experience will exhibit a significant expansion of their use of adults as a reference group when compared to youth with little or no work experience. In addition, students with programmatic work experiences will use adults as a reference group significantly more than students with independent work experience.

The use of adults as a significant reference group was measured by the four scales described in the preceding section of this report. A brief summary of those variables is provided in Figure 11.

FIGURE 11
INDEPENDENT VARIABLES

Students by Group	Definition
CE_2	Youth who have been participants in the Community Experiences for Career Education program for a minimum of 3 months.
CWE	Youth who have been participants in the Cooperative Work Experience program for a minimum of 3 months.
Independent Work Experience	Youth who have never participated in CE_2 or CWE but who have been employed full-time (over 30 hours per week) or part-time (less than 30 hours per week) for a minimum of 3 months.
No Work Experience	Youth who have less than 3 months experience in a work setting.

Characteristics of the Work Setting	Definition
Feedback	Students' perceptions that they receive information about the process in which they are involved. A mentor or supervisor is often the source of this information.
Hierarchical Interaction	Students' perceptions of the extent to which interaction with adult workers is as superior to subordinate.
Lateral Interaction	Students' perceptions of the extent to which interaction with adult workers is as equals.
Challenge	Students' perceptions that they have an opportunity to be innovative and to feel proud of their work.

DEPENDENT VARIABLES

Dimensions of the Use of Adults as a Significant Reference Group	Definition
Empathy	Students' perceptions that adults are aware of and are trying to understand adolescents.
Helpfulness	Students' perceptions that adults are very capable of helping with problems.
Communication	Students' perceptions that they are able to (and do) speak freely with adults.
Consultation	Students' tendency to turn to an adult for help in decision making.

The null hypothesis under consideration is: There are no differences among youth with programmatic work experience (2 groups; CE_2 and CWE), youth with independent work experience, and youth with virtually no work experience concerning the use of adults as a significant reference group (as measured by the Empathy, Helpfulness, Communication, and Consultation scales). In symbolic form, this hypothesis is H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4$ (the four population means are equal) which will be tested against the alternative H_1: There is some pair of population means μ_i and μ_j such that $\mu_i \neq \mu_j$ (some pair of the population means are not equal).

The alpha level was set at .0125 to accommodate performing four statistical tests (four dependent variables) with alpha equal to .05 (inflated alpha error).

A one-factor analysis of variance was performed to subject the data to formal test. Table 2 presents the F ratios for the four dependent variables. No statistically significant differences were observed among the four groups with regard to Empathy, Helpfulness, and Consultation.

As shown in Table 2, there is a significant difference among the group means on the Communication scale ($F = 4.69$; $df = 3,332$; $p < .004$). Since an analysis of variance fails to yield data on the significance of differences between pairs or combinations of means (Table 3), it was necessary to perform multiple comparisons to determine the nature of the differences.

Comparison one ($\hat{\psi}_1$) tests the difference between the three groups with some type of work experience (programmatic or independent work experiences) and the fourth group without work experience. Comparison two ($\hat{\psi}_2$) contrasts the two groups with programmatic work experience (CE_2 and CWE) with the independent work experience group.

The Dunn test was used to test these hypotheses. Selection of this procedure was based on:

1. a priori or planned contrasts;
2. contrasts were nonorthogonal;
3. contrasts (versus comparisons) were required; and
4. relatively few contrasts were planned.

An observed t statistic equal to or greater than 2.81 (the critical t value) is required for a specific contrast to be judged significant at the .005 level.

TABLE 2

ANALYSIS OF VARIANCE FOR YOUTH CLASSIFIED BY WORK EXPERIENCE GROUPS (A)

Dependent Variable	Source	df	SS	MS	F	p
Empathy	A	3	101.87	33.96	0.49	0.686
	Error	326	22374.58	68.63		
	Total	329	22476.45			
Helpfulness	A	3	23.75	7.92	0.85	0.467
	Error	336	3124.76	9.30		
	Total	339	3148.50			
Communication[1]	A	3	442.14	147.38	4.69[1]	0.003
	Error	332	10429.58	31.41		
	Total	335	10871.71			
Consultation	A	3	1.30	0.43	0.03	0.994
	Error	306	5089.25	16.63		
	Total	309	5090.55			

1. Statistically significant using the predetermined alpha level of .0125.

TABLE 3
MEANS AND STANDARD DEVIATIONS FOR DEPENDENT VARIABLES BY WORK EXPERIENCE GROUPS

Dependent Variable	Group	Group Size	Group Mean	Group SD
Empathy	CE_2	15	44.93	6.58
	CWE	59	42.29	9.44
	Independent Work Experience	115	42.32	7.91
	No Work Experience	141	42.23	8.23
	Total	330	42.39	8.27
Helpfulness	CE_2	15	13.93	3.15
	CWE	63	15.02	3.26
	Independent Work Experience	119	15.21	3.08
	No Work Experience	143	15.20	2.91
	Total	340	15.11	3.05
Communication	CE_2	15	26.20	4.77
	CWE	63	26.57	6.39
	Independent Work Experience	113	28.27	6.14
	No Work Experience	145	29.44	4.83
	Total	336	28.36	5.70
Consultation	CE_2	13	25.85	3.76
	CWE	52	25.71	4.40
	Independent Work Experience	110	25.82	4.13
	No Work Experience	135	25.90	3.93
	Total	310	25.84	4.06

Comparison one ($\hat{\psi}_1$) contrasts the three work experience groups to the no work experience group to determine if work experience is contributing to the overall significant F ratio in Table 2. Since the observed t statistic exceeds the critical t value ($|-5.95| > 2.81$), the first comparison is significant at the .005 level. Students in the work experience groups have more favorable (lower mean; mean = 25.10) perceptions with regard to communication with adults. In general, they seem to feel more comfortable conversing with adults than those students who have relatively little or no work experience (mean = 29.44).

Comparison two ($\hat{\psi}_2$) tests the difference between a combination of the two programmatic work experience groups (CE_2 and CWE) and those students with independent (not school-based, or supervised by school personnel) work experiences. The observed t statistic is lower than the critical t value ($|-1.94| < 2.81$). Comparison two is not statistically significant (alpha = .005). The two programmatic work experience group means (26.39) do not differ significantly from the independent work experience group mean (28.27). It appears that the method of acquiring work experience does not make a significant difference in the perceptions of students regarding communication with adults. Individuals who obtained work experiences through secondary school programs and individuals who acquired a job on their own (independent group) have equally favorable reactions to communicating with adults.

The Communication criterion scale was analyzed using analysis of covariance with school grade level as the covariate. This procedure permitted an assessment of the selection-maturation interaction rival hypothesis: i.e., the age and maturity of students with work experience can explain as much criterion variance as work experience (pseudotreatment).

The null hypothesis H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4$ was tested against the alternative H_1: there is some pair of population means μ_i and μ_j such that $\mu_i \neq \mu_j$; alpha = .0125. Table 4 presents the analysis of covariance summary information. A nonsignificant F ratio was obtained leading to acceptance of the null hypothesis at alpha = .0125. This test indicates that the work experience groups do not differ significantly on the Communication criterion scale when grade level is statistically controlled. Acceptance of the null in this case provides some support that maturation is a reasonable alternative hypothesis for the results obtained from the analysis of variance. That is, it may be grade level and not work experience group that primarily influences perceptions of adult communication.

TABLE 4
ANALYSIS OF COVARIANCE FOR DEPENDENT VARIABLE COMMUNICATION BY WORK EXPERIENCE GROUPS (A)--USING GRADE LEVEL AS THE COVARIATE

Source	df	SS	MS	F
Covariate[1] Grade Level	1	992.89	992.89	37.18[2]
A	3	173.57	57.86	2.17[3]
Error	249	6649.65	26.71	
Total	253	7816.11		

1. Covariate raw regression coefficient = -2.29.
2. $p < .001$.
3. $p > .10$.

Summary--Youth Transition to Adult Roles

One criterion variable, communication, yielded a statistically significant F ratio when analysis of variance was applied. The Dunn multiple comparison procedure produced a significant t value for the contrast of the three work experience groups versus the single group with little or no work experience. However, analysis of covariance was performed on the Communication scale using school grade level as a covariate. The results indicated that when grade level is statistically controlled, there are no differences among the treatment groups regarding communication with adults.

A review of study design limitations and these exploratory analyses seems to indicate that work experience, whether independent or part of a school program, does not contribute to understanding the use of adults as a significant reference group (as operationalized by the Empathy, Helpfulness, Communication, and Consultation scales) above the increment that would be expected to naturally occur through maturation. That is, students at higher grade levels tend to be more favorably disposed toward using adults as references.

Relationship of Work Characteristics to Criterion Variables

The second analysis relates to the following research question: What is the relationship of the four work setting characteristics (Feedback, Hierarchical Interaction, Lateral Interaction, and Challenge) to youth transition to adult roles (as measured by the criterion scales Empathy, Helpfulness, Communication, and Consultation). It was hypothesized that the work setting characteristics would contribute significantly to prediction of these criteria.

The null hypothesis is: There is no relationship between a linear combination of the independent variables Feedback, Hierarchical Interaction, Lateral Interaction, and Challenge and each dependent variable (Empathy, Helpfulness, Communication, and Consultation). The Alpha level was set at .0125 to accommodate performing four separate tests (four dependent variables) with alpha equal to .05 (inflated alpha error) for the set of four analyses. In statistical form, the H_0: $R^2 = 0$ (the proportion of criterion variance accounted for is not significantly different from zero) will be tested against the alternative H_1: $R^2 \neq 0$ (the predictors are statistically meaningful).

A stepwise multiple regression[27] approach was used. Four separate analyses were performed--one for each criterion scale. The stepwise procedure assesses the contribution of a variable in relation to the other variables and attempts to maximize R^2 (explained variance) while minimizing the number of predictors. Stepwise regression analysis was selected because of sample size considerations, number of available predictors, and lack of strong theory regarding the selection of predictors. Of course, the best selection procedure would approximate a hierarchical model guided by theory (predictors are entered in the regression model in accordance with an a priori hierarchy). Cohen & Cohen[28] discuss the strengths and weaknesses of multiple regression techniques.

Scale intercorrelations are presented in Table 5. F ratios were calculated for formal testing (Table 6).

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27. Norman H. Nie, C. Hadlai Hull, J. G. Jenkins, K. Steinbrenner, and Dale Brent. SPSS: Statistical Package for the Social Sciences, 2d. ed. (New York: McGraw-Hill, 1975).

28. Jacob Cohen and Patricia Cohen. Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. (Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1975).

TABLE 5
SCALE INTERCORRELATION MATRIX

	Empathy	Consideration	Communication	Consultation	Feedback	Hierarchical Interaction	Lateral Interaction	Challenge
Empathy	1.000	0.374	0.513	-0.270	0.189	0.177	0.194	0.236
Helpfulness		1.000	0.328	-0.183	0.053	0.179	0.103	0.139
Communication			1.000	-0.321	0.215	0.196	0.111	0.222
Consultation				1.000	0.082	0.083	0.022	0.120
Feedback					1.000	0.601	0.476	0.609
Hierarchical Interaction						1.000	0.431	0.483
Lateral Interaction							1.000	0.347
Challenge								1.000

TABLE 6

ANALYSIS OF VARIANCE FOR RELATIONSHIP OF WORK SETTING CHARACTERISTICS TO EACH DEPENDENT VARIABLE--TESTING R^2 FOR GOODNESS OF FIT OF REGRESSION EQUATION

Dependent Variable	Source	df	SS	MS	F
Empathy	Regression	4	610.24	152.56	2.24[1]
	Residual	119	8106.43	68.12	
	Total	123	8716.67		
Helpfulness	Regression	4	57.20	14.30	1.59[1]
	Residual	119	1068.28	8.98	
	Total	123	1125.48		
Communication	Regression	4	276.91	69.23	1.96[1]
	Residual	119	4201.83	35.31	
	Total	123	4478.74		
Consultation	Regression	4	31.13	7.78	0.48[1]
	Residual	119	1925.06	16.18	
	Total	123	1956.19		

1. $p > .0125$.

The multiple correlations ranged from 0.13 to 0.26 (Table 7). All F ratios were not statistically significant at the .0125 level. For this sample, the null hypothesis was not rejected for any of the criterion scales. That is, there did not appear to be a relationship between a linear combination of work setting characteristics and the criteria measuring various aspects of youth transition to adult roles (conceptualized as the use of adults as a significant reference group).

TABLE 7
STATISTICS FOR REGRESSION EQUATIONS

DEPENDENT VARIABLE	R	R^2	R^2	INDEPENDENT VARIABLES IN EQUATION
Empathy	.26	.07	.04	Challenge Lateral Interaction Hierarchical Interaction Feedback
Helpfulness	.23	.05	.02	Hierarchical Interaction Feedback Challenge Lateral Interaction
Communication	.25	.06	.03	Challenge Hierarchical Interaction Feedback Lateral Interaction
Consultation	.13	.02	-(.02)	Challenge Hierarchical Interaction Lateral Interaction Feedback

Additional analyses were conducted to assess the relative contributions to criterion variance associated with selected demographic variables as well as the four work characteristics. Specifically, during these analyses school grade level, involvement in extracurricular activities, and sex were included in the stepwise regression procedure as competitors to the four work setting characteristics. Subsequently, the four multiple regression analyses were rerun--one for each criterion scale. It is interesting to note that in almost every case the multiple correlation coefficients improved substantially (Empathy, 0.42; Helpfulness, 0.29; Communication, 0.53; Consultation, 0.28). In addition, school grade level and extracurricular activities were the strongest variables in all four regression equations. This finding regarding grade level parallels the results observed during the first set of analyses.

Summary--Relationship of Work Characteristics to Criterion Variables

For this sample the selected work characteristics (Feedback, Hierarchical Interaction, Lateral Interaction, and Challenge) do not significantly predict criterion scale variance on the Empathy, Helpfulness, Communication, and Consultation subscales used to measure the use of adults as a reference group. Subsequent analyses revealed that school grade level and extracurricular activities were better predictors than any work setting characteristic or combination of characteristics. The strongest predictor among the work characteristic set using the stepwise multiple regression procedure was Challenge.

Summary

Discussion

The findings indicate that differences in groups of youth between the ages of fifteen and eighteen regarding their desire to interact with adults and the need they feel for ease in talking with them can be predicted on the basis of years of schooling and participation in extracurricular activities. This prediction, when verified, may contribute to research. However, in our own discussions of possible explanations of the findings, several issues were raised. These can be discussed in terms of characteristics of the person, the environment, and the interaction of the two.

The persons involved in this study are youth ages fifteen to eighteen and adults. While students differ in terms of their curriculum, probable grade point average, and degree of alienation or involvement in the school, they all represent approximately the same socioeconomic and ethnic background. Further, the cultural background of their homes and past history is probably not significantly different than that of their employers. Therefore, the gradual development of the capacity to communicate with adults as represented by employers may not be a particular obstacle for this group of youth. In a sample of youth representing a significantly different set of cultural expectations, the facility to communicate with employers may be a greater obstacle.

The two institutional environments under consideration are the school and the workplace. Our data have led us to question whether the school and the workplace are significantly different in terms of a setting for adult/youth interaction. Both environments are organized and run by adults. Success in both depends to some degree on the capacity of youth to communicate effectively with adults. Further, participation in extracurricular activities involves informal interaction with adults.

Looking at the interaction of youth in the environments of school and work presents the most intriguing question. Data suggest that as a student progresses in school from grades ten through twelve, there is a statistically significant increase in the capacity to communicate with adults as represented by school personnel, family members, and workers. However, our data do not test whether youth who are out of school and out of work experience the same developmental growth of this capacity. It is possible that someone who is eighteen years old and who dropped out of school in the ninth grade, communicates with adults as a ninth grader rather than as a twelfth grader. It is also possible that this ninth-grade dropout communicates with adults more effectively than a twelfth grader because he/she assumed adult roles and responsibilities sooner. This dilemma is an example of our feeling that more questions were raised than answered by the study. The person-environment-interaction triad demonstrates the complexity of the issues.

The finding that youth in the CE_2 program demonstrate a positive perspective in their communication with adults is somewhat surprising when their background is considered. A comparison of youth who participated in CE_2 and CWE shows that differences exist both in their prior experience with adults in general and in their continuing relationships with them in school. Since youth who enter CE_2 are potential dropouts, it may be assumed that their relationship with teachers and other adults in the school environment has been less favorable than that of other youth. In addition, many of these youth come from broken homes.

For them, the supportive involvement of an adult as a learning manager becomes an extremely positive experience. Youth who participate in CWE appear to represent a broader range of students. For this reason one might expect a broader range of qualitative experiences with adults and a more positive general experience. Structurally, the CE_2 students are physically removed from the home high schools while CWE students remain a part of the student body. Consequently, youth in the CE_2 are less involved with their peers and the adults of the high school.

If it is true (as might be expected) that youth participating in CE_2 exhibit a relatively high degree of alienation from adults when they enter the program, then the impact of the program in overcoming such alienation is indeed remarkable. Another interesting observation is that three of the ten items on the Communication scale refer specifically to an adult at school, a teacher or a counselor. A student who is a potential dropout would not be expected to like to talk with teachers or counselors. It may be, however, that the counselor or teacher coordinator involved in the CE_2 program establishes such a strikingly different relationship with the students that they respond positively to items concerning the student/adult interaction.

The attempt to relate communication with adults to experience in work settings presents somewhat "a chicken or egg" question. Perhaps youth who are comfortable with adults are more likely to be attracted to work settings. Another explanation is that youth become more comfortable with adults as they mature. Speculations are intriguing, however, the developmental nature of the instrument itself suggests that conclusions at this point are not warranted.

Several issues discussed during the initial design of the instrument were never satisfactorily resolved. For example, questions used to elicit background information proved to be ambiguous and sometimes misleading. This entire section of the questionnaire should be rewritten using critical information, classified and coded in advance. In addition, other means of collecting such information should be explored. Use of the word "adult" was another issue. Because juniors and seniors in high school view themselves as adults in many respects, to imply that they are not adults may introduce hostility in the response. Most questions measured a response directed at adults in general. It may be that the respondents had begun to relate differently to specific adults in the work setting but were continuing to react to generalized adults as before. Finally, because so few respondents completed the scales which measured characteristics of the work setting, any analysis using those responses is weak. Furthermore, at present these scales have rather low reliability.

Recommendations for Future Research

This first-year effort to develop an instrument for measuring the use of adults as a significant reference group confirmed the original belief that very little basic research has been done to differentiate the components of experience in work settings from those in work-experience programs and to relate them to ways by which different groups of youth move into adult roles.

As discussed earlier in various parts of this report, our own efforts were hampered by the problems inherent in instrument development as well as by the difficulty of conducting research in real world settings. In spite of the limitations encountered, the communication scale with adults bears further examination. In addition, the apparent tendency for youth in grades eleven and twelve to have more work experience than those in the tenth grade raises questions of the interaction of maturity and adult/youth communication. Because communication with adults is central to the assumption of adult roles, the potential importance of this makes it worthy of further investigation. Another scale which also had a high reliability (.85) is conceptually related to communication and therefore should be given a second test. This scale, Empathy, essentially measures the extent to which youth perceive adults as capable of understanding their needs, values and perspectives.

The first-year work in defining characteristics of work settings to determine whether youth use adults as a reference group was in itself a major task. The scales which were developed did not hold up under factor analysis or regression analysis. At this time these scales do not appear to be sufficiently strong for further use without a significant investment in item development and pilot testing. Further, identification of significant characteristics of work settings appears to be in itself a difficult and important research enterprise.

The definition of groups of subjects for the study was still another aspect of the study which raised more questions than could be answered in a preliminary study. The underlying question is whether youth who get part-time jobs and those who enter work experience programs have significantly different scores on criterion variables than youth without experience in work settings. In an attempt to identify possible differences between groups, background information was collected. This information is presented in Figures 4-10. From this analysis, grade level and participation in extracurricular activities are possible influences on the use of adults as a reference group and are somewhat disproportionately represented in the groups. The interviews suggest that other ways in which the groups differ are in their relative alienation to school and in their family background. Grade point average could possibly be another measure of the extent to which youth fit into or succeed in school.

Based on the findings of the first year, we recommend that the second year be used to investigate whether youth with experience in work settings believe that they are better able to communicate with adults than those without this experience and to determine whether a second sample would demonstrate differences on the scale Empathy. We recommend that a sample be drawn that is similar to that in Medford with one group in cooperative work experience, one group with part-time work experience, one group with no work experience and one group in a program which is like CE_2 in that it serves youth who are potential dropouts. Greater emphasis should be placed on collecting background information.

The problem of how to design a study which controls differences between groups remains problematic. With adequate background information, it may be possible to control such variables. If youth who plan to enter work experience programs or those whose applications to programs have been rejected can be identified, a control group can be identified. The manner and extent to which this problem can be addressed depends upon what is possible within the research setting.

Finally, the finding that grade level and participation in extracurricular activities are better predictors on the scale Communication requires that age, grade level, and activities be controlled statistically in any future study.

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APPENDIX A
SUBSCALES

Item No.
PART II

Empathy

1. Most adults respect student opinions.
2. Adults are too old fashioned in their ideas.
3. Adults are not able to really understand the problems of students.[1]
5. So far as ideas are concerned, students and adults live in different worlds.
7. Adults do understand today's students.[1]
8. Adults think they have all the "right answers."
9. Adults don't realize that things are different today from when they were teenagers.[1]
12. Most adults are not willing to listen to students.[1]
14. Adults are out of step with the times.
15. The best way to handle adults is to tell them what they want to hear.
18. Adults are really interested in students.
21. Adults are forever sticking their noses into things that are none of their business.
22. Adults don't deal with problems of students very well.
23. Adults are set in their ways.

Helpfulness

10. Adults are more helpful with tough problems than friends at school.
13. Adults are more dependable than students.
16. Adults are more understanding of student problems than other students.
19. With most adults, personal problems can be openly talked about.
20. Adults' years of experience give them better judgment than students.[1]

Communication

4. I feel more comfortable around people my own age than around adults.
6. In a group of adults, I don't say what I think because I'm afraid they may not like me.
11. I feel free to say what I want around adults.
17. Adults are interested in the same things that interest me.
24. Most of my friends are adults.

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1. Item adapted with permission from D. F. Duncan, "Measuring the Generation Gap: Attitudes Toward Parents and Other Adults," Adolescence, 1978, 13 (49), 77-81.

Item No.

PART III — Communication - Continued

1. How well do you feel you get along with adults?
2. How often do you feel comfortable talking with your guidance counselor?
3. How often do you take time to stop and talk with one of your teachers?
4. How well do you feel you get along with your teachers?
5. How often do you sit down and just talk with adult members of your family?

PART IV — Consultation

2. Buying a car.
3. Trying to decide what I want to do for a living after I graduate.
4. Trying to decide whether or not to go to a trade school or vocational school after high school.
5. Trying to decide whether or not to go to college.
6. Trying to decide which college to attend.
9. Teaching me about how to get along in the world.